

Patent Abstracts of Japan

PUBLICATION NUMBER : 09038368
PUBLICATION DATE : 10-02-97

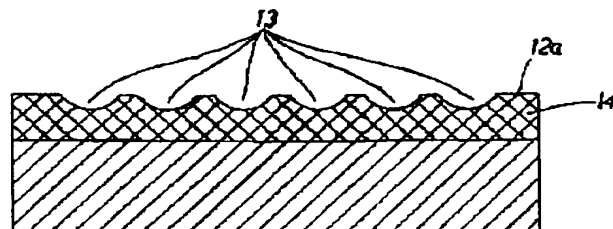
APPLICATION DATE : 28-07-95
APPLICATION NUMBER : 07192972

APPLICANT : BROTHER IND LTD;

INVENTOR : ISONO JUN;

INT.CL. : D05B 55/00

TITLE : NEEDLE BAR OF SEWING MACHINE
AND MANUFACTURE THEREOF



ABSTRACT : PROBLEM TO BE SOLVED: To obtain a needle bar having improved abrasion resistance at a low cost, in which seizure does not occur even in a severe sliding condition that a very small amount of oil is supplied, by forming a large number of small recesses, which are formed by applying external forces on a sliding surface, which contacts at least a bearing of a needle bar for supporting a needle.

SOLUTION: A large number of recesses 13 are formed on a surface 12a of a needle bar 12 made of steel material by a machining method such as a shot peening method, in which compressed air carrying hard fine particles is blown off to throw the particles at a high speed of about 100m/sec. The recess 13 has a depth of 1 μ m or less and holds therein oil fed in very small quantities to improve seizure resistant characteristics of the sliding surface. By forming the recesses 13, in the structure from the surface 12a to a depth of about 10 μ m, Martensitic transformation takes place due to a heat treatment caused by the collision of the particles and a hardened layer 14 is formed due to forging and work hardening effects.

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